IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
BEAUMONT DIVISION

FINISAR CORP.,	§	
	§	
Plaintiff,	§	
	§	Civil Action No. 1:05-CV-264
v.	§	
	§	
THE DIRECTV GROUP, INC., ET AL.	§	JUDGE RON CLARK
	§	
Defendant.	§	
	§	
	§	

MEMORANDUM OPINION AND ORDER CONSTRUING CLAIM TERMS OF UNITED STATES PATENT NO. 5,404,505

Plaintiff Finisar Corporation ("Finisar") filed suit against Defendants The DirecTV Group, Inc., DirecTV Holdings, LLC, DirecTV Enterprises, LLC, DirecTV Operations, LLC, DirecTV, Inc., and Hughes Network Systems, Inc. (collectively "DirecTV or Defendants") claiming infringement of United States Patent No. 5,404,505 ("the ' 505 patent"). The court conducted a *Markman* hearing to assist the court in interpreting the meaning of the claim terms in dispute. Having carefully considered the patent, the prosecution history, the parties' briefs, and the arguments of counsel, the court now makes the following findings and construes the disputed claim terms as follows.

I. Claim Construction Standard of Review

Claim construction is a matter of law. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 116 S. Ct. 1384 (1996) ("*Markman II*"). "The duty of the trial judge is to determine the meaning of the claims at issue, and to instruct the jury accordingly." *Exxon Chem. Patents, Inc. v. Lubrizoil Corp.*, 64 F.3d 1553, 1555 (Fed. Cir. 1995) (citations omitted).

"'[T]he claims of the patent define the invention to which the patentee is entitled the right to exclude.'" *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*) (citation omitted). "Because the patentee is required to 'define precisely what his invention is,' it is 'unjust to the public, as well as an evasion of the law, to construe it in a manner different from the plain import of its terms.'" *Phillips*, 415 F.3d at 1312 (quoting *White v. Dunbar*, 119 U.S. 47, 52 (1886)).

The words of a claim are generally given their ordinary and customary meaning. *Phillips* 415 F.3d at 1312. The "ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention."[1] *Id.* at 1313. Analyzing "how a person of ordinary skill in the art understands a claim term" is the starting point of a proper claim construction. *Id.*

A "person of ordinary skill in the art is deemed to read the claim term not only in context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Phillips*, 415 F.3d at 1313. Where a claim term has a particular meaning in the field of art, the court must examine those sources available to the public to show what a person skilled in the art would have understood disputed claim language to mean. *Id.* at 1414. Those sources "include 'words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.'" *Id.* (citation omitted).

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[1] Based on the patent and the representations of the parties at the hearing, the court finds that in this case such a person would have at least a Bachelor's degree, with a concentration of courses in computer science, involving topics such as computer operation and programming, software engineering, and data transmission. Depending on the university, this might be designated by a title such as electrical engineering, computer engineering, or computer science. The person would also have a minimum of two to three years experience in the fields of data communications and software engineering.

"[T]he ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." *Phillips*, 415 F.3d at 1314. In these instances, a general purpose dictionary may be helpful. *Id.*

However, the Court emphasized the importance of the specification. "[T]he specification 'is always highly relevant to the claim construction analysis. Usually it is dispositive; it is the single best guide to the meaning of a disputed term.'" *Phillips*, 415 F.3d at 1315 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). A court is authorized to review extrinsic evidence, such as dictionaries, inventor testimony, and learned treaties. *Phillips*, 415 F.3d at 1317. But their use should be limited to edification purposes. *Id.* at 1319.

The intrinsic evidence, that is, the patent specification, and, if in evidence, the prosecution history, may clarify whether the patentee clearly intended a meaning different from the ordinary meaning, or clearly disavowed the ordinary meaning in favor of some special meaning. *See Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979-80 (Fed. Cir. 1995). Claim terms take on their ordinary and accustomed meanings unless the patentee demonstrated "clear intent" to deviate from the ordinary and accustomed meaning of a claim term by redefining the term in the patent specification. *Johnson Worldwide Assoc., Inc. v. Zebco Corp.*, 175 F.3d 985, 990 (Fed. Cir. 1999).

The "'ordinary meaning' of a claim term is its meaning to the ordinary artisan after reading the entire patent." *Phillips*, 415 F.3d at 1321. However, the patentee may deviate from the plain and ordinary meaning by characterizing the invention in the prosecution history using words or expressions of manifest exclusion or restriction, representing a "clear disavowal" of claim scope. *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1327 (Fed. Cir. 2002). It is

clear that if the patentee clearly intended to be its own lexicographer, the "inventor's lexicography governs." *Phillips*, 415 F.3d at 1316.

II. Claim Construction - The ' 505 patent

Dr. Frank Levinson is the inventor of United States Patent No. 5,404,505. The assignee is Finisar Corporation. The ' 505 patent describes the transfer of information, from an information database, to subscribers, upon request, through satellite transmission. In general, this involves a central supplier station sending regularly scheduled data to its subscribers via satellite. However, a portion of the available bandwidth is reserved for subscriber requested data. Here, although that data is actually broadcast to all subscribers, only those who have requested the data will have access to it (i.e., be able to view the data). There is also the possibility of remote systems (usually local programming) sending data to subscribers.

The first five disputed terms are contained in the beginning of claim 1. This section is set out below with the disputed terms in bold.

> 1. An information transmission system comprising:
> a set of one or more computer memory devices on which is stored an **information database;**
> **database editing means**, coupled to said one or more computer memory devices, **for generating** a **hierarchically arranged set of indices for referencing data in said information database, including distinct indices for referencing distinct portions thereof,** and **for embedding** said indices in said information database.

"Information database." Used in claims 1, 2, 7, 10, 16, 17, 22, 25, 37, 39, and 44.

For this term, Finisar initially proposed "a collection of information" and gave some examples.[2] DirecTV suggested "[a] collection of non-transient data files that can be searched and retrieved." Their dispute centered on two points:

1. whether the data can be in several locations or must be "non-transient;" and

2. whether the definition must specify that the data can be "searched and retrieved."

Since the claim language alone does not resolve this dispute, the court looks to the specification.

The specification demonstrates that the database is not isolated. "The goal of the present invention is to provide widespread, high speed *access* to a virtual omniscient database . . . ." ' 505 patent, col. 1, ll. 54-56. (emphasis added); *see also*, col. 5, ll. 12-13. The specification analogizes the system to "having access" to a large collection of books in a library, even if all books are not instantly available. ' 505 patent, col. 2, ll. 17-23. All of the information in the database is tagged with indices to form a hierarchical structure to provide subscribers with access to various parts of the database according to different transmission schedules. ' 505 patent, col. 2, ll. 52-59. Accordingly, the information database is computerized information which can be accessed in some fashion.

There is no need to impose the limitation of "searched and retrieved" which implies a more specific search and retrieval system than the claims and specification describe. Nothing in the claim or specification indicates that the database must be searchable to any particular level of specificity. For example, common legal research systems allow very narrow searches, such as by case name, by judge name, and even by a particular word. In contrast, some of the data

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[2] By itself "collection of information" is not very useful. Data which has been deleted from a hard drive is a collection of information, which a forensic expert could retrieve if it has not been overwritten. But it would not be considered part of a database.

in the ' 505 system can only be referenced in broader terms, such as a search for a movie by title, but not necessarily by words used in a movie or group of movies.

As to the argument that the data in the database be "non-transient," it is important to note that one skilled in the art would know that computerized information is made up of electronic impulses - the classic "ones and zeros" of the binary system. It would also be known that a database could exist on a network of computers and memory storage devices. This is described as a possible embodiment. ' 505 patent, col. 6, ll. 61-64. Moreover, the use of the phrase "non-transient" will likely not be helpful to a lay jury. It is not helpful to focus on the time period during which data is being sent from the supplier station to the satellite and then to the subscriber station, as shown in Figure 1 of the patent.

This claim term will be construed as follows:

"information database" means "a collection of computerized information which can be accessed."

"Set of indices for referencing data in said information database." Used in claims 1 and 37.

To one skilled in the art, the terms "index" and "indices" do not always refer to a list, such as one finds at the back of a reference book. In the context of data management, an index can be a single data item. This is how the term is used in this patent. *See* ' 505 patent, col. 6, ll. 31-36; *see also The IEEE Standard Dictionary: Compilation of IEEE Standard Computer Glossaries: 610* 107 (1990) (definition one).

The parties initially disputed whether an index was used to "identify and/or locate specific items of data" (Finsar's proposal), or merely to "locate specific items of data." (DirecTV's suggestion). At the hearing the following definition was discussed: "pieces of digital information, (each of which contains an identification value, and in many cases other

information) used to reference specific items of information in the database." Finisar agreed with this formulation. DirecTV preferred to replace "reference" with "select."

The claim language itself is "referencing data in said information database." The patentee did not provide a special definition of "reference." There is no indication in the patent that "referencing" has any special technical meaning, or is used in any sense other than the widely accepted and commonly understood meaning of "refer to." The specification describe:

1. a "set of indices referencing all of the data in the information database . . . ." ' 505 patent, col. 6, ll. 38-39;

2. "a set of assigned indices to reference each distinct portion . . ." of the information in the database. ' 505 patent, col. 13, ll. 23-24; and

3. "The indices associated with reference data . . . may be embedded in various portions of the transmitted data for the purposes of cross-referencing related information." ' 505 patent, col. 13, ll. 33-36.

It is true that the indices may be used in various ways, such as to select data packets, col. 5, ll. 28-30, or to request data, col. 5, ll. 45-52. While various uses are illustrative, they are not needed for the jury to understand the definition, nor to describe how a person skilled in the art would understand the word. This claim term is therefore defined as follows:

"Set of indices for referencing data in said information database" means "the pieces of digital information, (each of which contains an identification value plus, in many cases, other information) used to refer to specific items of information within the database."

"Hierarchically arranged." Used in claims 1 and 16.

The specification states that all of the information in the database is "tagged" with indices to form a single hierarchical structure. ' 505 patent, col. 2, ll. 52-55. The purpose is to allow the subscriber to access various pieces of information in the database, which is sometimes done based upon information already accessed. Figure 9 of the patent shows various levels in a sample hierarchy. The arrows show that indices do not necessarily refer just to information in "lower" levels. Reference may be to a "higher" level. Indices may be "included in the root information (the basic information transmitted most frequently), and also may be embedded in various portions of the transmitted data for the purposes of cross-referencing related information." ' 505 patent, col. 13, ll. 32- 36. Therefore DirecTV's original suggestion that indices are classified into "successive levels" is not the best way to define this term.

For these reasons, and based upon counsels' representations at the hearing, this term will be defined as follows:

> **"Hierarchically arranged set of indices"** means "the indices are placed in some order based upon logical relationships between or among the indices."

"Database editing means . . . for generating . . . and for embedding . . ." Used in claims 1 and 37.

The parties agree, and the court finds, that this is a means-plus-function claim term, governed by 35 U.S.C. § 112 (6). The claim includes the word "means," which invokes a presumption that § 112 (6) applies, and it does not recite a structure for performing the claimed function to rebut the presumption. *See Harris Corp. v. Ericsson Inc.*, 417 F.3d 1241, 1248 (Fed. Cir. 2005). Determining the claimed function and the corresponding structure are matters of

claim construction, so it is appropriate to deal with these issue at the *Markman* stage. *WMS Gaming Inc., v. Int'l Game Tech.,* 184 F.3d 1339 (Fed. Cir. 1999).

The claim clearly states, and the parties agree, that the function consists of generating a hierarchically arranged set of indices, and embedding those indices in the information database. Therefore the specification must disclose a structure that generates the indices and embeds them in the database. *See Med. Instrumentation and Diagnostics Corp. v. Elekta AB,* 344 F.3d 1205, 1211 (Fed. Cir. 2003).

Since this function is computer implemented, the patent must disclose an algorithm to be performed by the computer to accomplish the recited function. *WMS Gaming Inc.*, 184 F.3d at 1349. This does not mean that the patentee must disclose specific source code for the computer. And, the term "algorithm" is not limited to a formula of mathematical symbols. For example, the steps, formula, or procedures to be performed by the computer might be expressed textually, or shown in a flow chart. *See Application of Freeman,* 573 F.2d 1237, 1245-46 (C.C.P.A. 1978) and cases cited therein. Under 35 U.S.C.§ 112 (6), the structure, in this case a computer which executes an algorithm, must be sufficiently disclosed so that one of ordinary skill in the art can determine the limitations on what is claimed. *See Budde v. Harley-Davidson, Inc.*, 250 F.3d 1369, 1381-82 (Fed. Cir. 2001); *see also In re Dossel,* 115 F.3d 942, 946-47 (Fed. Cir. 1997).

The Court in *Dossel* noted that the specification did not "disclose exactly what mathematical algorithm will be used . . . ." *In re Dossel,* 115 F.3d at 946. However, the Court stated that the specification described a device that receives data from two sources and then "computes, from the received data, the current distribution by mathematical operations including a matrix inversion or pseudo inversion, and then outputs the result to a display." *Id.* at 946. The

specification also said "'known algorithm' could be used to solve the standard equations which are known in the art." *In re Dossel,* 115 F.3d at 946. While not a precise mathematical formula or flow chart, this description is far more detailed than the bare repetition of the function in the ' 505 patent.

The ' 505 patent describes no algorithm, formula, or series of steps performed by the computer to accomplish the function of generating indices and embedding them. Finisar cites to col. 6, ll. 37-40 which states "software **132** (executed by CPU **130**) generates a hierarchical set of indices referencing all the data in the information database **112** and embeds those indices in the information database." This is nothing more than a restatement of the function, as recited in the claim.

Finisar also points to col. 6, ll. 48-51, which describes an alternate embodiment in which a block of packet ID values are assigned to an off-line information provider. That provider organizes the information and embeds the indices in the database. Aside from the fact that this appears to be an attempt to encompass human activity (e.g., decision-making by an individual), it provides no algorithm or description of a structure by which the indices are generated or embedded.

The language in these parts of the specification simply repeat the function described in the claim. Such a description of the structure is so broad as to read on any and every means for performing the recited function. The court finds that this claim term is indefinite because no structure is disclosed for performing the recited function.[3]

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[3] The court is aware that a patent is presumed to be valid. To that end the court considered whether a disclosure of a microprocessor plus software, without any algorithm other than a repetition of the function might have been sufficient in 1995 when the patent was issued. As an analogy, qualified immunity of officers is based upon the law at the time of

"Dividing said selected portions of said information database into a prioritized set of tiers, wherein all the selected portions of said information database in each tier are transmitted at a corresponding repetition rate." Used in claims 1 and 16.

The specification describes a division of the database into "tiers" or groups for transmission at different times depending on the anticipated, and the requested, demand for the information. ' 505 patent, col. 13, ll. 63 - col. 14, ll. 51. Root information, which provides an index to the information database, is transmitted most frequently. Depending on their priorities, other groups of the information are transmitted at less frequent intervals.

To define the term, DirecTV proposed "Exclusively partitioning those portions of the information database selected for transmission into groups of information each of which are transmitted at a specified rate." Finisar agreed to this formulation with the deletion of "exclusively" and the substitution of "designated" for "specified."

There is no indication that the word "dividing" had a special meaning to one skilled in the art. Nothing in the claim language, nor in the specification, indicates that the same information could not be part of a "first tier," transmitted, say four times an hour, and also part of a "fifth tier," transmitted perhaps only once every twenty-four hours.

DirecTV argued that the ordinary and common meaning of the word "dividing" implies an exclusive partition. But under an "ordinary and common meaning" approach, if A is the set of all of the information in the system, it could be divided into subsets B, C, and D. Subset B could have some elements in common with C and D, while, at the same time subset C might have

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their action, not the law at the time of trial. The Court examines patents through the eyes of one of ordinary skill in the art at the time the patent is issued, not based upon later advances of science. But even in 1995 it was clear that patentees should have known that in means-plus-function cases, where the structure linked to the recited function was a computer, the patentee had to disclose not only that there was a computer with software, but also disclose the steps, formula, or equation (the "algorithm") the software performed. *See eg. In Re Alappat*, 33 F.3d 1526, 1543 (Fed. Cir. 1994), *Freeman*, 573 F.2d at 1245-47 (1978).

no overlap with D. The court concludes that adding the word "exclusively" improperly places a limit on the claim, which is found neither in the claim language nor in the specification.

The parties also differed over whether "designated repetition rate" or "specified repetition rate" should be used to define the claim term "corresponding repetition rate." The claim states that the portions of information in each tier are "transmitted at a corresponding repetition rate." Table 1 at col. 14, ll. 20-33 gives an example of tiers with corresponding rates of transmission. The specification also provides the following: "The particular repetition rates associated with each tier of data and the amount of data allocated to each tier are selectable parameters that will need to be carefully considered in order to maximize the utility of the system for most subscribers." ' 505 patent, col 14, ll. 37-41.

While "specified" and "designated" mean almost the same thing, they could imply, especially to a lay juror for whom the terms are defined, that there is a required or unchanging repetition rate. "Selectable" as used in the specification, implies some choice, and that change is possible. The disputed term will be defined as follows:

> **"Dividing said selected portions of said information database into a prioritized set of tiers, wherein all the selected portions of said information database in each tier are transmitted at a corresponding repetition rate"** means "placing each part of the information database selected for transmission into one or more groups of information, and transmitting each group at a chosen repetition rate."

"Means for receiving and storing video program materials." Used in claim 10.

The parties agree this is a means-plus-function claim term. The word "means," in this claim invokes a presumption that § 112 (6) applies, and the claim does not recite structure for performing the claimed function to rebut the presumption. *See Harris Corp. v. Ericsson Inc.*, 417 F.3d 1241, 1248 (Fed. Cir. 2005). The court must first identify the particular claimed function and then identify the corresponding structure in the specification. *Med. Instrumentation & Diagnostics Corp. v. Elekta AB*, 344 F.3d, 1205, 1210 (Fed. Cir. 2003). The patentee must clearly link or associate the structure with the claimed function. *Elekta*, 344 F.3d at 1211.

The parties also agree that the specification discloses as structure: Conventional VHS video recorder (*see* col. 12, ll. 21 "recording"); digital tape recorder (*See* col. 12, ll. 23-24 "--downloaded); and RAM and/or disk in the subscriber's computer (*see* col. 5, ll. 32 "--downloaded", col. 8, ll. 40-42 "--downloaded). Finisar would include as structure the buffer and the fast disk storage device.

The specification describes storing received data packets, which could include video program materials, in a ring buffer of the data filter. ' 505 patent, col. 11, ll. 36-39. This storage is only temporary, for the purpose of checking the packet ID against packet ID data stored in the data filter. If the received packet is to be retained, it is "downloaded" to the subscriber's computer. ' 505 patent, col. 11, ll. 39-57. The specification also describes use of a fast disk storage device if longer periods of delay are needed before downloading. ' 505 patent, col. 11, ll. 66 - col. 12, ll. 4. In particular, the specification states that larger amounts of data can be "buffered" using a fast disk storage device, as compared to using the ring buffer alone. ' 505 patent, col. 11, ll. 39 - col. 12, ll. 8.

DirecTV argues that the ring buffer and the fast disk storage device are already identified in claim 1. Since claim 10 is dependent on claim 1, DirecTV asserts that the doctrine of claim differentiation precludes their use as structure for the function described in claim 10.

Claim 1 starts with: "An information system comprising." ' 505 patent, col. 17, ll. 68. The word "comprising" is open ended, meaning that the patentee claims at least what follows, and potentially more. Part of claim 1 is "subscriber stations . . . each subscriber station including a data filter . . . ." ' 505 patent, col. 18, ll. 28-30. The data filter is diagramed in figure 7 and described at col. 11, ll. 34-52. It is clear from claim 1, and from the specification, that each subscriber station has a data filter, and, in the described embodiment, each data filter has a ring buffer. However, claim 1 does not require a ring buffer or a fast disk storage device. Moreover, claim 10 is differentiated from claim 1 by the limitations set out in claim 9, and by the additional limitations of claim 10 itself.

A means-plus-function claim term encompasses each structure in the specification that performs the recited function. *Micro Chem. Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1258 (Fed. Cir. 1999). Although "buffering," "recording," and "downloading" may refer to specific forms of "storing," each appears to meet the recited function of "storing." Hence, this term will be defined as follow:

> **"means for receiving and storing video program materials"** can be: "1. A ring buffer with or without additional random access memory; 2. Fast disk storage device; 3. Conventional VHS video recorder; 4. Random access memory and/or disk; 5. Digital tape recorder."

"Downloads into a memory storage device those of said received data packets which match said specified set of requested data packets." Used in claims 1, 16, 37, 39, and 44.

This dispute is somewhat unusual in that it does not depend on definitions of technical terms, but rather on grammatical construction. The parties agree that "downloads" means "transfers." They also agree that what is transferred are data packets, and that the data packets are transferred to a memory device.

The claim states that the data filter is part of the subscriber station, and that the data filter stores filter data. *See* Claim 1, ' 505 patent, col. 18, ll. 28-30. The filter data specifies the requested data packets. col. 18, ll. 31-33. The specification describes this process in more detail, but gives no indication that the claim language should be given anything but the ordinary and customary meaning. *See* col. 8, ll.37-46, col. 11. ll. 34-57 and Figure 7.

Finisar argues that the data packets to be transferred are "specified" by the filter data. DirecTV argues that the data filter actually transfers the data packets to the memory device. Both are, in a sense, correct.

Claim terms are to be read according to the rules of ordinary English grammar. *In re Hyatt*, 708 F2d 712, 714 (Fed. Cir. 1983). Accordingly, it is the data filter "that stores filter data . . . and that downloads into a memory storage device . . ." the data packets. col. 18, ll. 30-35. On the other hand, the claim and specification also make it clear that the data packets to be downloaded are those specified or requested in the filter data. This term will be defined as follows:

> **"Downloads into a memory storage device those of said received data packets which match said specified set of requested data packets"** means "the data filter transfers into a memory storage device the data packets specified in the filter data."

"Transmission bandwidth." Used in two claim terms:

> **11a. "**wherein a portion of the **transmission bandwidth** available to said transmitter is **reserved** for transmitting portions of said information database requested by subscribers." Used in claim 7.
>
> **11d.** "wherein said scheduling step includes **reserving** a portion of **transmission bandwidth** available for said transmitting step for transmitting portions of said information database requested by subscribers." Used in claim 22.

The patent describes a system that divides available bandwidth into tiers and transmits information at different repetition rates depending on the demand for, or anticipated demand for, the information. Part of the bandwidth is reserved "for satisfying requests for access to information not provided with the basic subscriber service." *See* ' 505 patent Abstract col. 3, ll. 5-10.

The only dispute between the parties is that DirecTV believes the reserved portion of the transmission bandwidth is to be used only to respond to direct requests from subscribers. Finisar argues that the reserved portion of the bandwidth may be used to provide information requested by subscribers on a general, or long term basis, as well as for responses to particular requests.

The language of this claim phrase is clear and straightforward - part of the transmission bandwidth, or transmission capacity, available to the transmitter is reserved, or set aside, for transmitting portions of the information database that have been requested by subscribers. The parties appear to be focused on whether "requests" by a subscriber are "direct" requests or "general" or "long term" requests. The specification indicates that requested data may be included in the basic subscriber service. ' 505 patent, col. 5, ll. 45-65. The specification also indicates that subscriber-requested data is transmitted "in the portion of the . . . bandwidth that is not used for transmitting the regularly scheduled basic programming." ' 505 patent, col. 4, ll.

55-65. Hence, whether data is "requested" does not appear to depend on whether the request is "direct," "general," or "long term." Rather, requested data is simply data a subscriber has asked to have access to, without regard for whether the request is "direct," "special," "long term," or "general." There is no basis for limiting the use of transmission bandwidth which is "reserved," to direct responses to one time requests for information. Moreover, this claim phrase does not exclude also providing "requested" data using bandwidth that is not reserved. This term will be defined as follows:

> **"Transmission bandwidth"** is **"reserved"** by setting aside part of the transmission capacity for transmitting portions of the information database that are requested by subscribers.

"Transmission times" as used in two claim terms**:**

> **11b.** "transmission scheduler **reserves transmission times** for transmitting portions of said information database requested by subscribers." Used in claim 37; and
>
> **11c.** "said transmitting step including transmitting said requested portions of said information database during said **reserved transmission times.**" Used in claim 44.

The parties agree that "reserving transmission times" means setting aside transmission times. Again the question is whether or not time has to be reserved in direct response to a request. This would imply that time was reserved only if a subscriber called in and requested certain information. That may be one embodiment, but, as DirecTV agrees, the "reserved" phrases used in the claims do not explicitly state that any action will be "in response to" subscriber request. DirecTV Brief, p. 29.

As with the earlier phrases, the plain language of the claim phrase simply provides that transmission time is set aside for transmitting data requested by subscribers. Nothing in this language limits the "request" to any particular type, nor does the language prohibit transmission of data during "unreserved" times. As pointed out above, data "requested" by a subscriber may be included in the basic subscriber service. ' 505 patent, col. 5, ll. 45-65.

This term will be defined as follows:

> **"Transmission times"** are **"reserved"** by setting aside time for transmitting portions of the information database that are requested by subscribers.

"Transmission channels" used in claims 9, 10 24, and 25.

This disputed term appears in claim 9, which is dependent on claim 1, and in claim 10, which is dependent on claim 9.

> 9. The information transmission system of claim 1, wherein said transmitter transmits said data packets using multiple **transmission channels**.

> 10. The information transmission system of claim 9, wherein . . . said transmitter transmits data packets containing at least selected portions of said video program materials on at least one of said multiple **transmission channels** and primarily non-video information on at least one other one of said multiplicity of **transmission channels**;

The term also appears in almost identical language in claim 24, which is dependent on claim 16, and in claim 25, which is dependent on claim 24.

One of ordinary skill in the art would understand that, depending on the context, "channel" as used in the field of data transmission could have two meanings. Sometimes "channel" is used to refer to a band of frequencies of a determined width, measured in megahertz. (MHz). This is the way "channel" is commonly used when referring to common T.V. or radio channels. DirecTV argues that these claims should be limited to this construction.

But multiple "channels" can be carried on a single frequency using a technique called time division multiplexing ("TDM"). In this process, a transmission path (a frequency) is divided into time slots to carry data from several sources at the same time. For example, data from each of three sources is divided into a series of short pieces or "frames" each of which will fit into a time slot. The first piece of data from the first source is transmitted in the first time slot. The first piece of data from the second and third data sources follow in time slots two and three respectively. This sequence is repeated for the second, third and succeeding pieces of data from each source. In effect all three sources of data are transmitted on one path, but in different, time differentiated "channels."

Finasar argues that "transmission channels" as used in these claims, encompasses both kinds of "transmission channel." The various technical dictionaries and references noted in the parties' briefs describe "channel" in both ways. But, contrary to Finisar's arguments, just because a word can be used in two or more ways, does not mean that it was. The issue is: what is meant by "transmission channels" in these particular claims?

This issue illustrates the tension between understanding the meaning of a claim term in the context of the specification, and incorporating limitations from a disclosed embodiment into the claims. In this case, more than one embodiment is described in the specification. The preferred embodiment is a single channel implementation, and at least one other embodiment is a multiple channel implementation. Several of the dependent claims appear to be directed specifically to a multiple channel implementation. But, although the specification describes at least two embodiments, the terms "channel," and "transmission channel" are consistently used to describe a band of frequencies. In fact, the specification distinguishes between a time division multiplexed "time slot" and a "channel" or "transmission channel."

The specification identifies the one-channel implementation as the "preferred embodiment." ' 505 patent, col. 4, ll. 65 - col. 5, ll. 1-2. The specification indicates that satellite transmission channels can be used for different geographical areas. ' 505 patent, col. 5, ll. 2-5, and it refers to a "single satellite channel," suggesting a single band of frequencies rather than a single TDM time slot in a band of frequencies. ' 505 patent, col. 5, ll. 23-26. When "multiple transmission channels" are used, the subscriber stations "change the transmission channel being monitored" (' 505 patent, col. 7, ll. 27-36), and the satellite receiver must be told which channel should be selected (' 505 patent, col. 12, ll. 29-36). Bandwidth in a single channel transmission system may be subdivided into tiers, with 25% of the available bandwidth being reserved. ' 505 patent, col. 13, ll. 67 - col. 14, ll. 37. The "bandwidth of a channel" (' 505 patent, col. 14, ll. 36) may be subdivided by TDM, suggesting a distinction between channel and TDM time slot.

This suggestion is much more explicit when the specification describes video programming, described as "a classic problem in that it tends to occupy large amounts of bandwidth." ' 505 patent, col. 16, ll. 46-48. The specification states that "in the preferred embodiment most video programming is transmitted on a separate channel." ' 505 patent, col. 16, ll. 54-56. This sentence is useless surplusage if "separate channel" refers to TDM. Of course the video programs have to be separated from other data. If only one frequency divided "channel" is being used, there would be no way to transmit the video programs separately, other than with TDM.

The specification then states that on this "separate channel" it would be "possible to use time multiplexing so as to transmit six video programs . . . simultaneously." ' 505 patent, col. 16, ll. 57-60. One of ordinary skill in the art would know that TDM could be used to transmit several programs on one frequency "channel" so there would have been no need to refer to the "separate channel" if it did not mean another frequency.

Claims 10 and 25 are clarified, when read in the context of the portions of the specification discussed above. Both of these claims describe transmitting video programming on "at least one of said multiple transmission channels" and transmitting "primarily non-video information on at least one other one of said multiplicity of transmission channels." ' 505 patent, col. 19, ll. 66 - col. 20, ll.3 and col. 23, ll. 7-12. What is the purpose of these dependent claims if "transmission channels" refers to TDM?

Hence, although the term "channel" may, in some contexts, apply to a time multiplexed slot on a band of frequencies, the specification of the ' 505 patent clearly distinguishes between a time multiplexed slot and a band of frequencies, with the later being referred to as a "channel" or "transmission channel."[4] Therefore this claim term will be defined as follows.

"transmission channels" means "paths for transmitting electronic signals which are differentiated by their frequencies."

III. Conclusion

The jury shall be instructed in accordance with the court's interpretation of the disputed claim terms in the ' 505 patent.

So **ORDERED** and **SIGNED** this **17** day of **February, 2006.**

Ron Clark, United States District Judge

[4] The Court need not decide whether the term "channel" would properly apply to a TDM time slot in another context.